

**CLAIMS**

- 5 1. A dose protector for use in an inhaler comprising a housing defining an airway; a dose of medicament optionally retained in a dose container; and covering means characterised in that said means is in biased contact with said dose or container retaining the dose and only opens in response to airflow though and/or pressure drop across the airway in a first direction but not in a second, opposite direction.
- 10 2. A dose protector as claimed in claim 1 wherein the covering means is only open in the presence of airflow through and/or pressure drop across the airway in a first direction after which it returns to its resting position.
- 15 3. A dose protector as claimed in claim 1 or claim 2 wherein the airflow through and/or pressure drop across the airway is caused by patient inhalation.
- 20 4. A dose protector as claimed in claims 1 to 3 wherein the said covering means senses airflow through and/or pressure across drop the airway and responds thereto.
5. A dose protector as claimed in claim 4 incorporating electronic means for sensing airflow through and/or pressure drop across the airway and/or means of responding thereto.
- 25 6. A dose protector as claimed in any preceding claim wherein the covering means responds by covering the dose more effectively when the airflow through and/or pressure drop across the airway is in a second direction.

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7. A dose protector as claimed in claim 6 wherein airflow through and/or pressure drop across the airway in a second direction is caused by the patient exhaling.
- 5      8. A dose protector as claimed in claims 1 to 7 where the covering means comprises one or more poppet valves, diaphragm valves, rotary valves, reciprocating valves, sealing flaps or a combination thereof.
- 10      9. A dose protector as claimed in any one of claims 1 to 8 wherein the dose is metered by volume of medicament or surface area.
- 10.A dose protector as claimed in claim 9 wherein the dose is metered by volume into a container.
- 15      11.A dose protector as claimed in claim 10 wherein the said container is a pocket.
- 12.A dose protector as claimed in any preceding claim wherein the dose or container retaining the dose has a surrounding rim.
- 20      13.A dose protector for use in an inhaler comprising a housing defining an airway; a pocket suitable for containing a dose of medicament; and characterised in that it comprises at least one sealing flap in biased contact with said pocket and providing a cover for the pocket; wherein the contact
- 25      between the at least one sealing flap and the pocket is broken by airflow through the airway in a first direction but not in a second opposite direction.
- 14.A dose protector as claimed in claim 13 wherein the sealing flap is spaced away from the pocket by the airflow once contact with the pocket is broken.

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15. A dose protector as claimed in claim 13 or claim 14 additionally comprising a closure mechanism wherein the at least one sealing flap is held in contact with the pocket by a closure means which prevents the contact between the at least one sealing flap and the pocket being broken by airflow through the airway in any direction.

16. A dose protector as claimed in claim 15 wherein the pocket has a surrounding rim.

17. A dose protector as claimed in any one of claims 13 to 16 wherein the said sealing flap vibrates in the airflow once the contact with the pocket is broken.

18. A dose protector as claimed in any one of claims 13 to 17 wherein the sealing flap is made of thermoset rubber.

19. A dose protector as claimed in any one of claims 13 to 18 wherein the sealing flap is of equivalent or slightly reduced width relative to the distance between the inside walls of the housing at the base of the walls of the housing where the sealing flap is in contact with the pocket.

20. A dose protector as claimed in claim 19 wherein the distance between the inside walls of the housing increases as the distance away from the pocket increases.

21. A dose protector as claimed in claims 1 to 12 wherein the said covering means is spaced away from the dose or container retaining a dose to coincide with the airflow through and/or pressure drop across in the first direction once the contact with the dose or container retaining the dose is broken.

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22. A dose protector as claimed in any one of claims 1 to 21 wherein the covering means vibrates in the airflow through and/or pressure drop across the airway in the first direction.
- 5 23. A dose container as claimed in claims 1 to 22 wherein the housing contains a valve flap such that when the airflow is in a second opposite direction, the airflow exits the housing by means of the valve flap.
- 10 24. A dose protector as claimed in any preceding claim wherein the said covering means protects the dose from the patient exhaling into the device, moisture contamination, particulate contamination and loss of the dose or a combination thereof.
- 15 25. A dose protector as claimed in any preceding claim additionally comprising a fixed seal.
26. A dose protector as claimed in any one of claims 1 to 25, in combination with a dose of medicament.
- 20 27. An inhaler comprising a body, a mouthpiece, and a dose protector as claimed in any preceding claim.
- 25 28. An inhaler as claimed in claim 27 wherein the said inhaler is a dry powder inhaler.
29. An inhaler as claimed in claim 26 or claim 27 in combination with at least one dose of a medicament.
- 30 30. Use of an inhaler as claimed in any one of claims 27 to 29 for the administration of medicament.